Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

March 22, 1969

Eric P. Newman and Kenneth E. Bressett
Authors of The Fantastic 1804 Dollar
Whitman Publishing Company
Racine, Wisconsin

Dear Sirs:

Enclosed is a copy of a manuscript which I am submitting to Ed Rochette, Editor of The Numismatist, I would greatly appreciate your permission for the inclusion of a reproduction of your schematic drawing of the Castaing machine as figure 1 of my manuscript.

I would also be grateful for your considered, constructive criticisms.

Enclosed is a stamped, self-addressed envelope for your convenience in replying.

Sincerely yours,

Allen Curtis

Allen Curtis

March 26, 1969

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Virginia 23185

Dear Mr. Curtis:

Thank you for sending the copy of your article on the Dolly Madison half dollar. I found your analysis quite enjoyable, as it is a pleasant blend of facts and what I am sure you intended to be "tongue-in-cheek" romanticism.

You have the permission of Whitman-Western Publishing Company, Inc. to use the illustration of the Castaing machine. I would only ask that you give proper credit to the source as you have indicated in your article, except that the proper name of the parent company is Western Publishing Company, Inc.

I have forwarded your letter and article to Eric Newman, who may also wish to comment upon your work.

Sincerely,

WESTERN PUBLISHING COMPANY, INC.

Kenneth Bressett

Kenneth E. Bressett
Senior Editor
Whitman Hobby Division

KEB:ca

bc: Eric P. Newman ✓

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

March 31, 1969

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Va.

Dear Mr. Curtis:

At the suggestion of Kenneth Bressett, we are returning your manuscript with a few comments written on it. I am glad to see you study edge die slippage but there are quantities more to study.

You should avoid, in my opinion, references to your personal collection and personal theories. This is not in the best taste. You should never indicate you may be wrong as this undermines the article. You should show a speculation has been made where it has been and let the reader make up his mind.

I don't advise using the word "reeding". This is the expression for the design put on U.S.coins struck in a collar and should be distinguished from designs on milled coinage which you are talking about.

There are enclosed photocopies of the Castaing machine as published in the Grande Encylopedie in the 18th century. This seems to show some of the parts in scale. Maybe it will clear up some matters. If you want to illustrate it for publication that can be arranged.

We hope that we have been helpful.

Sincerely,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN/atb

CC: Mr. Kenneth Bressett

A NON-PROFIT CORPORATION FOR EDUCATION
THROUGH RESEARCH AND EXHIBITION
OF COINS, CURRENCY AND HISTORIC OBJECTS

April 5, 1969

Mr. Kenneth E. Bressett
Senior Editor
Whitman Hobby Division
Western Publishing Company, Inc.
1220 Mound Avenue
Racine, Wisconsin 53404

Dear Mr. Bressett:

Thank you very much for your kind words about my proposed article on the Dolly Madison half dollar. I am most appreciative of your granting me permission to use the illustration of the Castaing machine.

When and if I have suitably rewritten my article for submission to The Numismatist, I shall certainly use the correct name of your company in crediting the illustration.

Enclosed is a copy of my reply to Mr. Newman regarding his constructive criticisms of my article.

Sincerely yours,

Allen Curtis

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

April 5, 1969

Mr. Eric P. Newman
Eric P. Newman Numismatic Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Your advice and constructive criticisms of my proposed article on the Dolly Madison half dollar were most appreciated. Also, I am very thankful for your thoughtfulness in sending me a photocopy of the Castaing machine as published in the Grande Encyclopedie in the 18th century. When and if I suitably rewrite my article, I may wish to include this illustration along with the parts list.

I do have some questions regarding some of your comments:
(1) When you say that the fixed die could also slip, do you mean that the planchet could slip by portions of the fixed die without rotating? If so, doesn't this mean that the planchet will have rotated less than 180 degrees when it has reached the end of the fixed die? Also, wouldn't this obviate chances of overlap?
(2) Why would the use of edge dies longer than one half the circumference of the planchet (not just slightly longer) interfere with normal operation? Perhaps, I did not make myself clear about the composition of such dies. Each die, for instance, in the case of the half dollars having "ridges" between words, consists first of a blank section, then ridges, then the lettered inscription, then ridges, and finally another blank section. Under normal operation the planchet would first roll between blank sections of equal length on each die, then between the dies for a distance which is slightly more than one half the circumference of the planchet, and finally between blank sections of equal length once again. Although I did not suggest it in my article, I think it is possible that the dies regardless of the size or denomination of the coin inscribed were all of the same size.
(3) Was I misled by your schematic drawing in regard to the hole through which the planchets drop to the basket below? It appeared to me that the placement of the hole with respect to the dies was such that the planchet would be released from between the dies well before reaching the hole requiring the workman to push the planchet into the hole.
(4) This question is an aside concerning the Grande Encyclopedie drawing. Did the artist erroneously picture the coins in the basket as already having their faces struck? Or, did the French reverse

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

the process used by the U. S., i.e., did they strike the faces of the coin first and then mill the edges?

Your answers to the first two of the foregoing questions could well determine the fate of my article so I would appreciate greatly if you would be so kind as to answer them. Of course, if you should have the opportunity, it would be helpful to have the answers to questions 3 and 4 also.

Thank you for your kindnesses.

Enclosed is a copy of a letter that I sent to Mr. Bressett.

Sincerely yours,

Allen Curtis

Allen Curtis

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

[redacted]

[redacted]

May 3, 1969

Mr. Eric P. Newman
Eric P. Newman Numismatic Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Having received no answer to my letter of April 5, 1969, I wonder whether you thought me too presumptuous in asking the further favor of amplifying and explaining some of the comments you so kindly made regarding my proposed article. If this should be the case, perhaps an explanation of the circumstances leading up to my request for your constructive criticisms would change your views.

Late last year I submitted an article to The Numismatist for possible publication. It was accepted immediately and appeared in the January, 1969 issue. As far as I was concerned it was accepted too quickly because it precluded having been sent to referees for review. In my previous experience in the computer field (in which I have had more than a dozen technical papers published in major journals, IEEE Trans. on Elect. Comput. and J. of Assoc. for Comput. Mach., as well as a college textbook published by Van Nostrand) referees have been used to facilitate the publication of quality papers. Therefore, I vowed that I would try to have real authorities in the field pre-referee any other numismatic papers I might write, thus, the request for your criticisms accompanying my request for the use of your schematic diagram of the Castaing machine.

By the way, for several years now I have voluntarily refereed papers on a regular basis for the IEEE. This is a task which I enjoy.

Sincerely yours,

Allen Curtis

Allen Curtis

Copy to: Mr. Kenneth E. Bressett

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

May 23, 1969

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Virginia 23185

Dear Mr. Curtis:

The reason you have not had an answer to your letter of April 5, 1969 is that I have misplaced it and cannot locate it. I certainly will be glad to amplify my thoughts, as you requested in your letter of May 3, 1969.

Is it possible that I returned your letter of April 5, 1969 with the manuscript?

I tried to telephone you but, unfortunately, cannot find your telephone number but I did have a nice chat with other people by the name of Curtis in the Williamsburg area.

Would you send me another copy of your letter?

Sincerely yours,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN/atb

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

June 10, 1969

Mr. Allen Curtis
P.O. Box 380
Williamsburg, Va. 23185

Dear Mr. Curtis:

1. When I said the fixed die could slip, you were right that I meant that the fixed die could lose its grip on the coin and the coin rotate without moving forward. This would possibly result in the coin not completing its passage. Overlap could occur in this situation if the coin were put through again or the handle turned back to begin afresh.

2. If the edge dies were longer than half of the circumference there would be overlap. If sections of the die were blank then the coin would not roll as well and might slip on the blank portion. The pressure on the blank die might spoil an already lettered or ridged edge section.

3. The hole in the table was beyond the point of release. After a few coins had been lettered they would push each other into the hole. The workman didn't have to push them in except if things got jumbled.

4. The artist was wrong in picturing the coins as struck. The milling was done first under the French process from which the United States Mint process was copied.

Your letter about the 1690 farthing is fascinating. The reason these edges may be so clear is that tin is soft and would not slip as compared to silver planchets. I have done work on the tin 1/24 real of James II so I fully see how this edge matter intrigued you.

Kindest regards,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN
atb

A NON-PROFIT CORPORATION FOR EDUCATION
THROUGH RESEARCH AND EXHIBITION
OF COINS, CURRENCY AND HISTORIC OBJECTS

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

June 18, 1969

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Va. 23185

Dear Mr. Curtis:

1. When I said the fixed die could slip, you were right that I meant that the fixed die could lose its grip on the coin and the coin rotate without moving forward. This would possibly result in the coin not completing its passage. Overlap could occur in this situation if the coin were put through again or the handle turned back to begin afresh.

2. If the edge dies were longer than half of the circumference there would be overlap. If sections of the die were blank then the coin would not roll as well and might slip on the blank portion. The pressure on the blank die might spoil an already lettered or ridged edge section.

3. The hole in the table was beyond the point of release. After a few coins had been lettered they would push each other into the hole. The workman didn't have to push them in except if things got jumbled.

4. The artist was wrong in picturing the coins as struck. The milling was done first under the French process from which the United States Mint process was copied.

Your letter about the 1690 farthing is fascinating. The reason these edges may be so clear is that tin is soft and would not slip as compared to silver planchets. I have done work on the tin 1/24 real of James II so I fully see how this edge matter intrigued you.

Kindest regards,

ERIC P.NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN
atb

Mr Allen Curlee
P.O. Box 30
[illegible] Dec 23 '85
Dear Mr Curlee,

(1) When I said the fixed die would [illegible] you read my that [illegible], I meant that the fixed die could have its grip on the coin and the coin go to without moving forward. This would possibly ~~start the coin~~ result in the coin not completing its passage, [illegible] ~~[illegible]~~ then [illegible] of the coin [illegible] through again on the handle [illegible] back [illegible]

(2) If the edge dies were longer than [illegible] half of the [illegible] session because there would [illegible] of [illegible], and [illegible] blank [illegible] the coin [illegible] edge on the blank [illegible] portion. The [illegible] of the blank die ~~might~~ spoil an already lettered, [illegible] section.

(3) The [illegible] in the table was beyond the point of [illegible]. After a few coins had been lettered they [illegible] each side into the hole, the workmen [illegible] have to push them in except if things got jumbled.

(4) The artist was wrong in picturing the coins as struck, the milling was both first made [illegible] French process from which the U.S. Mint processes [illegible]

Your letter about the 1690 farthing was fascinating. The reason these edges maybe so clear is that tin is softer and would not slip as compared to silver planchets. I have done work on the tin halfpenny of James II so I [illegible] these edge matter intriguing [illegible]

Kindest regards,

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

May 27, 1969

Mr. Eric P. Newman
Eric P. Newman Numismatic Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

It was a pleasure to receive your May 23rd letter. The reason you could not reach me by telephone is that my number is unlisted. The Curtis number you called was probably that of Dr. Joseph Curtis, Dean of the Marshall-Wythe law school at the College of William and Mary, who is practically a neighbor.

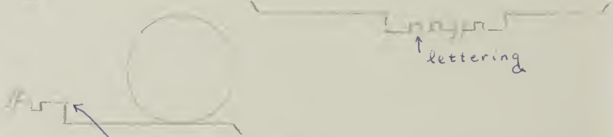
Because my April 5th letter was an answer to your comments on my prospective article, it cannot have been returned with the manuscript. Enclosed is another copy of my April 5, 1969 letter to replace the missing one.

You may or may not be interested in my motivation for writing the article, but in case you are, here it is:

The area of my greatest numismatic interest is English coinage after the Restoration. In my modest collection I have a 1690 tin farthing which I treasure: In the first edition of C. Wilson Peck's "classic" English Copper, Tin, ..., he stated on pg 156 in regard to a 1689 tin farthing with mistakenly paired edge inscription NVMMORVM ★ FAMVLVS ★ 1690: ". . . Far more puzzling is the fact that no 2nd issue farthing has so far been traced with the particular 1690 edge with 5-pointed mullets." My 2nd issue tin farthing did have 5-pointed mullets but appeared to have an extra one, the lower two points being visible after the date. I wrote to Mr. Peck in 1962; he was excited about my discovery since this was the first 1690 edge that even had 5-pointed mullets; he asked me to send my coin to the British Museum for his inspection. After the inspection he declared it genuine but did not agree with me about the extra 5-pointed mullet; he thought that if it was a symbol at all it was of another mullet type because of the orientation of the two points. In his 2nd edition, however, he included my farthing as I described it, apparently trying to be as fair as possible to me although I never made any such request. About a year ago, I began wondering whether both the (Fitzwilliam Museum, Cambridge, England) 1689 specimen described above and mine came from the same edge dies but that slippage of the Castaing machine caused the divergence in their actual inscriptions. Because no error edges of the tin issues have been discovered, I did not have much with which to work; hence, I decided to study the workings of the Castaing machine on U.S. half dollars because of the preponderance of edge errors.

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

As a result of my studies I formulated some theories regarding the English tin series: The reason error edges have not been discovered is that there were very, very few, if any. I think the design of their edge dies was instrumental in eliminating slippage errors. They had raised lettering, numerals, and symbols instead of having them incuse as on the U.S. edges. Thus, their dies could have had the following appearance (exaggerated):



The projection of the moving die would serve to lock the planchet in and nullify the effects of slippage before reaching a similar projection on the fixed die. This idea is consistent with my idea that slippage of half dollar planchets before entering between the dies is the primary cause of error edges of the type discussed in my article. Recently, I examined other tin farthings and halfpennies in my collection; each had a vertical mark after NVMMORVM and another 180 degrees away. This made me suspect that such marks were the result of the planchet entering between both dies and being marked by the aforementioned projections. On my 1690 farthing the mark after NVMMORVM is 180 degrees away from the "extra 5-pointed mullet". Another thing about this coin is that the planchet was not cut completely through but was "sheared off" or broken away the rest of the way; this rest of the way includes the section showing the "two mullet points". Now, I am of the opinion that the "mullet points" are actually the result of the vertical mark and the "shearing action".

Back to U.S. half dollars once again, I reiterate my statement that I would be most appreciative if you would amplify your comments by answering at least the first two questions posed in my April 5th letter.

Thank you.

Sincerely yours,

Allen Curtis

Allen Curtis

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

June 27, 1969

Mr. Eric P. Newman
Eric P. Newman Numismatic Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Your amplified comments concerning my original manuscript, "A Dolly Madison Half Dollar", were extremely helpful and gratefully received.

As you can see by the enclosed copy of my letter to Mr. Rochette, they were invaluable to me in rewriting the paper. Ordinarily, I would have given you a special acknowledgment for your help at the end of the paper. However, I felt that this might give the impression that you endorsed my principal thesis.

Thanks again for your help.

Sincerely yours,

Allen Curtis

Allen Curtis

June 27, 1969

Mr. Edward C. Rochette, Editor
American Numismatic Association
P. O. Box 2366
Colorado Springs, Colorado 80901

Dear Mr. Rochette:

Enclosed is a manuscript of a paper which I hope you will consider for publication in The Numismatist.

If you do decide to publish the paper, Figure 1 will need to be reproduced from the schematic drawing on page 28 of The Fantastic 1804 Dollar. The authors, Eric P. Newman and Kenneth E. Bressett, have kindly given their consent for its use.

I am additionally grateful to Mr. Newman for his helpful and constructive criticisms of my original manuscript. The present manuscript is a revised version based on Mr. Newman's comments. I must hasten to say, however, that Mr. Newman still does not agree with my primary thesis that half dollar edge errors of the overlapping word variety were not a result of slippage alone but also due to the use of edging dies appreciably longer than half the circumference of the half dollar planchet.

In the numismatic literature it is generally agreed that edging die slippage is the cause of such errors, but no convincing analysis of how precisely these errors were produced accompanies statements to this effect. In making such analyses for myself I was always confronted with contradictory evidence until formulating my thesis.

In any case, I think that the presentation of a controversial thesis might serve the purpose of a catalyst in bringing forward a noncontradictory, convincing analysis of how slippage could have been responsible for these errors.

Thank you for your consideration in this matter.

Sincerely yours,

Allen Curtis
ANA 34358

CC: Mr. Eric P. Newman

August 23, 1969

Mr. Stewart P. Witham
The Leonard Agency Co.
704 Harter Bank Bldg.
Canton, Ohio 44702

Dear Stewart,

Yesterday I received a copy of Eric Newman's August 20, 1969 letter to you. I wish to second his suggestion that you write an article on half dollar edge dies to be published simultaneously with mine. That such a suggestion is very much to my liking is demonstrated by the following statement from the covering letter sent with my article to The Numismatist: . . . "I think that the presentation of a controversial thesis would serve some purpose if a catalyst in bringing forward a noncontradictory, convincing analysis of how slippage could have been responsible for these errors".

I submitted my article to The Numismatist only after having submitted the initial draft to Mr. Newman for review. My final draft was written on the basis of the constructive criticisms so kindly provided by Mr. Newman. However, I should point out that this does not mean that he now agrees with my primary thesis; he does not.

It is unfortunate that I did not follow this procedure with my first article in The Numismatist. In such a case it would have at least been modified as detailed in my December 5, 1968 letter to you. Unfortunately, my air mail special delivery letter recommending these changes to The Numismatist was too late for publication in the January issue.

By the way, if you should write to the Norwegian and/or the Dutch mints, would it be presumptuous of me to ask you to relay the information that they impart? I should be greatly appreciative. I am particularly interested in the exact length of all edging dies used versus the circumference of the coins they edged.

Sincerely yours,

Allen Curtis

CC: Mr. Eric P. Newman

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

September 3, 1969

Mr. Eric P. Newman
Eric P. Newman Numismatic Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Enclosed is a newly revised version of my paper, "A Dolly Madison Half Dollar". Shortly after submitting the previous version of this paper to The Numismatist, I uncovered an inconsistency in my longer edging die theory.

My latest version resolves this inconsistency. This required modifying my theory only to the extent that I postulated a different arrangement of the usual die texts and the added sections.

I think my arguments are much improved, but would appreciate your opinion.

Sincerely yours,

Allen Curtis

Allen Curtis

CC: Mr. Edward C. Rochette

A DOLLY MADISON HALF DOLLAR

by Allen Curtis ANA 34358

Most numismatists are well aware of the old tradition that the portrait on the 1792 half disme and large cent is that of Martha Washington. But how many numismatists know that another first lady, Dolly Madison, is honored on U. S. coinage? No such coin is described in the numismatic literature, but it does exist.

The aura of mystery surrounding a coin honoring such an historical figure as Dolly Madison is lifted by the admission that the coin is an unlisted error variety of the 1810 U. S. half dollar. Her first name, DOLLY, an elision of DOLLAR and FIFTY, is clearly milled into the edge. The fact that this error occurred on a genuine coin minted during her husband's administration is a most remarkable coincidence.

I have romanticized that some early mint craftsman, who was an admirer of this popular first lady, decided to produce a token of his esteem for her in the form of a Dolly Madison half dollar. However, I am always quickly brought back to earth from such fanciful dreams by the memory of statements like the following. Half dollar edge letter variations where the words have overlapped are not die variations since they result from slippage of the Castaing machine dies [Ref. 1]. Nevertheless I could dream. Suppose this was an exception!

This dream led me to a study of the Castaing machine to determine to my own satisfaction how slippage could account for the DOLLY edge error. The results of this study, an investigation of slippage, and my theories on how the edge lettering Castaing machine might have produced errors of this type are presented in the remainder of this paper.

The Castaing Machine

Specific information on the Castaing machine used in the first Philadelphia mint is rather sparse. The most comprehensive source appears to be The Fantastic 1804 Dollar by Eric P. Newman and Kenneth

K. Bressett [Ref. 2]. The information found in this lucid exposition is drawn, like other sources [Refs. 3 and 4], to a large extent from the reminiscences of George E. Sellers [Ref. 5].

The Castaing machine employed two dies to produce the incuse lettering around the edge of a planchet. Each die was attached to a die holder. One die holder was fixed, and the other was movable. The movable die holder was mounted on a sliding bar having a rack of teeth facing upward and was held against strong springs or in a slot parallel to the fixed die holder in such a way that the distance between dies was slightly less than the diameter of a planchet. A large hand-cranked vertical gear served to activate the sliding bar.

Newman and Bressett include with their verbal description of the Castaing machine a schematic drawing reproduced here in figure 1. The drawing provides a pictorial description of the machine and facilitates the understanding of its general operating characteristics.

Figure 1. - The Castaing Machine

The process for inscribing the planchet was as follows. The workman pushed a planchet into the gap between the two dies so that its rim touched them both. He cranked the movable die past the fixed die, the planchet caught between the dies was forced to roll slightly more than 180° whereupon it was released and was pushed through a hole into a basket below.

Newman and Bressett assert that the two parallel dies were just slightly longer than half the circumference of the planchet. Having the edging dies this length both prevented gaps from occurring in the edge inscription and insured complete upsetting of the border on the faces of the planchet (since a by-product of the edging process was the raising of marginal ridges on the planchet faces).

For the half dollar [Ref. 1] one edging die with raised letters read:

FIFTY CENTS OR

and the other read:

HALF A DOLLAR

Strictly speaking, the edging dies were only as above until 1814 at which time a star was added after DOLLAR on the latter die. The star continued to appear thereon until 1836. In 1830 and 1831 "plaques" consisting of rectangles with diagonal ridges across them appeared between words as well as before and after the star. From 1830 through 1836 vertical ridges replaced the plaques [Ref. 1].

From the top view of the Castaing machine shown in figure 1, it is clear that the planchet could be inscribed by cranking the movable die past the fixed die either from left to right or from right to left. However, the presence of the planchets ready for lettering on the left and the hole on the right would indicate that the operation always proceeded from left to right. Also, supporting the idea of such a unidirectional operation are the following: It would be easier to push the planchet between the dies from the left with the left hand and then crank with the right hand. Also, the crank could be "stopped" so that the movable die would always return to the same starting position regardless of the size of the coin being milled; moreover, the workman would be free to crank the movable die to the right far enough to release the planchet regardless of its size.

Slippage

Under ideal conditions the planchet while in contact with the movable die rolls counterclockwise a linear distance which is exactly half that travelled by the die. See figure 2(a) and (b). This means

Figure 2. - Movable die (a) at starting position, (b) moved distance d without slippage, (c) moved distance d with movable die slippage, (d) at point of planchet release after no slippage, (e) at point of planchet release after fixed die slippage

that after the movable die has travelled completely past the fixed die, the planchet will have rotated barely more than 180° since each of the dies is slightly longer than half the circumference of the planchet.

Now, let us analyse the edging process under different possible conditions of die slippage.

Case 1. The movable die slips past the planchet at any time in its complete journey from left to right, but the fixed die experiences no slippage. The planchet will move a distance less than under ideal conditions, see figure 2(b) and (c). How much less depends on the amount of movable die slippage. The planchet will also rotate less than ideally. However, to achieve an elision of words on the edge of the planchet, the planchet must rotate at least 180°. Otherwise instead of elided words or parts thereof, the words or partial words would appear noticeably separated from each other. A discussion of movable die slippage which is sufficiently small as to allow 180° rotation of the planchet will be deferred until the presentation of Case 5. Movable die slippage that is not small cannot be held responsible for word overlapping errors without the intervention of the workman, for instance, attempting to take corrective action. The composition of the edge of the planchet before corrective action depends on whether the slippage occurred before and/or during the time the planchet was moving between both dies.

(i) Suppose the slippage occurred entirely while the planchet was travelling between both dies. Then the edge inscription would consist of an incomplete fixed die text and the entire text of the movable die but with some of the letters and/or words as well as plaques or ridges, if they are part of the text, more closely spaced than under ideal conditions. The corrective action would be to position the planchet and restart the process so that the fixed die text was completed and the movable die text was left unchanged. For the movable die text to be unchanged on the edge of the planchet, the second impression of the movable die on the planchet would have to coincide with the first impression, this would require slippage once again and at the exact places it occurred before. Thus, any attempt at corrective action would be doomed to failure, and the movable die lettering would most likely appear at least partially doubled on the edge of the planchet.

(ii) Suppose some slippage occurred before the planchet started travelling between the dies. The edge of the planchet would have milled on it incompleted texts of both dies; the initial and final parts, respectively, that is, the rightmost parts, of the movable and fixed die texts would be missing.* The spacing on the text from the movable die may or may not be closer than under ideal conditions depending on whether or not any slippage took place once the planchet started moving forward between the dies. In any event the corrective action would be to position the planchet so as to complete both texts without changing the impressions already made. The probability of accomplishing this without doubling some of the lettering is even more slight than it was for (i). Therefore, Case 1 is surely not a source of overlapping word errors.

Case 2. The movable die slips past the planchet at any time in an incompleted journey from left to right but the fixed die experiences no slippage. In Case 1 some or all the lettering from the edging die texts was milled into the edge of the planchet before intervention occurred. Therefore, it will be assumed in the present case without loss of generality that when the workmen intervenes the planchet will still be blank or else have only plaques or ridges depending on its edge type. The corrective action, through one or more repetitions of the milling operation, either yields a satisfactory lettered edge or else leads to another slippage case, Case 1 or one of the cases yet to be discussed. Therefore, at most Case 2 can be a secondary source of overlapping word error edges depending on what cases ensue after repeating the edging process.

Now and henceforth, whenever the right or left portions of either die are mentioned, these directions will be with respect to the right or left parts of the Castaing machine as seen in the top view of figure 1, for instance. Thus, whenever the text of the fixed die is discussed in connection with the edging process, it should be remembered that the letters appear in reverse order from left to right.

Case 3. The movable die does not experience slippage in its complete journey from left to right, but the fixed die at some time or another loses its grip on the planchet. At the time of the fixed die slippage the planchet rotates without moving forward. The planchet moves a distance less than under ideal conditions (see figure 2(d) and (e)) but will rotate barely more than 180°. The text on the movable die will be milled on the planchet edge correctly and completely. The lettered part of the fixed die text may or may not be complete on the planchet edge, and slippage will have the effect of lengthening the spacing between letters and/or words milled on the planchet by the fixed die. Word overlapping errors,* of which the following are typical [Refs. 1 and 6]

FIFTY CENTS ORHALF A DOLLAR
FIFTY CENTS OHALF A DOLLAR
FIFTY CENTS ORLF A DOLLAR
FIFTY CENTS ORF A DOLLAR
FIFTY CENTS OR A DOLLAR
FIFTY CENTS OLAF A DOLLAR

can be explained by fixed die slippage. The explanation requires that the lettered texts of the movable and fixed dies be FIFTY CENTS OR and HALF A DOLLAR, respectively. Moreover, since the movable die text appears correctly in its entirety and only a slight overlapping can occur, the movable die must be such that the letter R of OR is at the extreme right with little space to its right. The maximum allowable space to the right of R is the small excess that the die is longer than one half the circumference of the planchet. Likewise, the H of HALF must appear a distance from the right hand portion of the fixed die approximately equal to the spacing between the words A and HALF to assure a pleasing and uniform spacing under ideal conditions. The distance the planchet failed to move forward (figure 2(e)) due to slippage must be equal to or greater than the distance from the H of HALF to the right hand part of the fixed die. For instance, if that distance were equal to that from the L of HALF to the right end of the die, then the resulting error would be FIFTY CENTS HALF A DOLLAR. Overlapping is not apparent, but the L and/or F would have been milled on the same portion of the planchet edge as the blank spacing preceding the R of OR on the movable die. For the error having obvious overlapping, FIFTY CENTS OLAF A DOLLAR, the distance to the right of R in OR must be less than for the other five typical errors cited. In fact, the distance required to mill L and R is probably the normal overlapping distance.

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*These errors should preferably be called word elision errors, because the words are always elided in this type of error but only infrequently does actual overlapping of a part of one word occur on another.

Case 4. The movable die does not experience slippage in an incomplete journey from left to right, but the fixed die at some time or another loses its grip on the planchet. If at least some of the lettering is milled on the edge of the planchet, arguments like those used in Case 1 serve to eliminate this case as a source of overlapping word type errors. On the other hand if no lettering is milled on to the planchet edge before intervention this case is equivalent to Case 2.

Case 5. The movable die slips past the planchet at any time in its complete journey from left to right and the fixed die at some time or another loses its grip on the planchet. Unless the movable die slippage is small and for a distance less than or equal to the normal overlap distance, this case can be eliminated on the same grounds as Case 1. If the movable die slippage is sufficiently small, then the discussion of Case 3 applies. Additionally, another error edge which has been classified as being due to slippage [Ref. 1], FIFTY CENTS OALF A DOLLAR, can be explained by the present case. Suppose that the distance between R of OR and the extreme right end of the movable die was negligible. Furthermore, suppose that due to movable die slippage before the planchet started moving forward the effective starting position of the movable die was at a point between the O and R of OR, then the aforementioned error could ensue from fixed die slippage alone occurring during the remainder of the process. The movable die slippage could have occurred as the result of the workman initially exerting too much downward pressure on the planchet as he was pushing it between the two dies. Case 3 could also account for this error if the movable die was erroneously positioned slightly ahead of its normal starting position.

Case 5. The movable die slips past the planchet at any time in an incomplete journey from left to right and the fixed die at some time or another loses its grip on the planchet. If some lettering is milled on the edge of the planchet, this case case can be dismissed on the basis of arguments like those advanced for Case 1. If no lettering appears before intervention, the case is equivalent to Case 2.

From the foregoing analysis it appears that word elision errors were generally caused by fixed die slippage alone or else a combination of fixed and movable die slippage with the latter slippage being very small.

Analysis of DOLLY Error

The DOLLY error or more precisely, HALF A DOLLY CENTS ON, like the error, FIFTY CENTS HALF A DOLLAR, omits parts of two words instead of the more usual one. Thus, an explanation rather similar to that given already for the latter error would have to apply to the DOLLY error. In this instance, however, the movable and fixed dies would have the texts HALF A DOLLAR and FIFTY CENTS ON, respectively. The R of DOLLAR would have to appear at the extreme right part of the movable die. The N of ON on the fixed die to be consistent with normal cases as well as the other error cases examined would have to be at or very near the extreme left hand portion of the fixed die. The distance of the N of ON from the left end of the fixed die must not exceed the normal overlap distance. Thus, the F of FIFTY would be at a distance equal to or slightly greater than the spacing between, say, CENTS and FIFTY, from the right hand portion of the fixed die. Then if the effective starting position of the movable die was at a point between L and A of DOLLAR of its text, and if the distance spanned by AR was less than or equal to the normal overlap distance, fixed die slippage alone for the remainder of the process could cause the omission of FIFT and the appearance of Y immediately adjacent to DOLL.

This fixed die slippage would cause the inscription Y CENTS OR to be spread over a distance equal to one half the circumference of the planchet. However, on the Dolly Madison half dollar this inscription spans a distance which is slightly more than one third the circumference of the planchet. Therefore, slippage alone does not explain the existence of the Dolly Madison half dollar.

Alternative Sources of the DOLLY Error

Another possible source of the DOLLY error is a seemingly minor die making error, that of shifting the lettered text FIFTY CENTS OR to the right of its normal position on the fixed die. ~~(as seen from the top view of the castaing machine).~~ The presentation of some measurements facilitates the discussion of this possibility. The distance spanned by Y CENTS OR is $34\frac{1}{2}$ millimeters, the same as that spanned by HALF A DOLL.

The complete lettered text HALF A DOLLAR would most likely not have required more than 40 of the $51\frac{1}{2}$ millimeters comprising the half circumference of the planchet. The placement of the R of DOLLAR to the extreme right of the movable die would under ideal operating conditions bring about a space of at least $11\frac{1}{2}$ millimeters between the words OR and HALF. How much more than $11\frac{1}{2}$ millimeters this space might be depends on how close the R of OR is to the left end of the fixed die. In any case this spacing is at least 2 millimeters greater than the largest spacing between any two words of the inscription milled on the coin. Moreover, the distance between DOLLAR and FIFTY would be less than the average spacing between words even under ideal operating conditions. To provide correct punctuation it would be preferable to make this space noticeably greater than the spacing between other pairs of words. Therefore, the placement of the R of DOLLAR that close to the right end of the movable die would in itself have constituted a minor die making error. The spacing of the letters and ~~between~~ words of the partial inscription Y CENTS OR is not noticeably spread out, if at all, due to slippage when compared with HALF A DOLL. If any, this spreading would not have been far more than 3 millimeters. Thus, either the lettered text FIFTY CENTS OR was shifted far to the right of its normal position and little die slippage occurred, or else the shifting of the text was not excessively far to the right of normal,* but the bulk of the slippage occurred before the planchet reached the A of OR on the fixed die and thereafter there was little or no more slippage. Either of these possibilities coupled with the necessity of simultaneous edging die seems too unlikely to consider seriously as a source of the DOLLY error.

The use of edging dies that were more than slightly longer than one half the circumference of the half dollar planchet is another possible source of the DOLLY error. If this were the case, each of the edging dies could have been composed as follows: an initial blank section followed by a section which is one half the circumference of the planchet in length and which contains the complete text for that die including blank, plaque, or ridge subsections. The initial blank sections, the right and left parts of the movable and fixed dies, respectively, would have to be the same length for proper results under ideal operating conditions.

The edging process under ideal conditions would be as follows: The planchet is placed in its starting position as shown in figure 3(a).

Figure 3. - Planchet at (a) starting position, (b) beginning of both texts

As the movable die travels from left to right a distance equal to twice the length of its initial blank section the planchet rolls forward to the beginning of the texts of both dies, see figure 3(b). Thus far nothing but blankness has been milled on the edge of the planchet. When the movable die has been cranked the remainder of the way past the fixed die, the complete inscription will have been milled into the edge of the planchet.

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* This distance would have had to be at least 5 millimeters to the right of normal, since the letters DOLL and A, not counting the spaces between them, aggregate 5 millimeters. Fixed die slippage would have been arrested while these letters were being milled by the movable die.

How the typical word overlapping errors,

FIFTY CENTS ORHALF A DOLLAR
FIFTY CENTS ORALF A DOLLAR
FIFTY CENTS ORLF A DOLLAR
FIFTY CENTS ORF A DOLLAR
FIFTY CENTS OR A DOLLAR
FIFTY CENTS ORHF A DOLLAR

could have occurred when longer edging dies were used is now explained. The texts FIFTY CENTS OR and HALF A DOLLAR would be on the movable and fixed dies, respectively. The former text would be placed on the movable die such that the R of OR would be immediately to the left of the initial blank section. Thus, the planchet starting with R of OR on the movable die would rotate exactly 180° coincidently with the movement of that die past it. As in Case 3 of the slippage analysis, the last part of the fixed die text to be milled appears adjacent to the R of OR milled by the movable die when the slippage occurs on the fixed die only. If this last part was the space to the left of HALF or was the H, or the A, or the L, or the F of HALF, then one of the first five errors cited would result. The sixth error could occur if the FIFTY CENTS OR text had been misplaced a mere millimeter to the right on the movable die.

All six errors could also have been the result of movable die slippage before the planchet started moving between both dies. In this case the planchet would reach the text of the movable die before getting to the text of the fixed die. This would have the effect of bringing OR and HALF, or parts thereof, closer together, how close they come together depends upon the amount of movable die slippage. In this case no fixed die slippage need occur.

Now we come to the DOLLY error. The movable die would have the text HALF A DOLLAR on it. This text would have to be shifted to the right about 4 millimeters from its ideal position so that it infringed that much on the initial blank section. Then either movable die slippage before the planchet moved forward between the dies or else an incorrect initial positioning of the movable die could have caused this die to have an effective starting position at a point between L and A of DOLLAR. The completion of the process would then result in the DOLLY error. A somewhat similar analysis would explain such errors as FIFTY CENTS HALF A DOLLAR.

Other evidence supporting the use of longer dies than previously thought is now presented. The addition of plaques and then of ridges between words to the texts on both edging dies for the half dollars during the 1830 - 1836 period should have significantly reduced die slippage. However, the frequency of occurrence of overlapping word error half dollars does not in fact appear to have diminished for those years. The fact that this was no remedy suggests that contrary to the Case 3 slippage analysis conclusions the source of these errors was not fixed die slippage. It would indicate that movable die slippage prior to the forward movement of the planchet between the dies was the main cause of such errors since the introduction of plaques and ridges would have little effect on this type of slippage. Further confirmation that fixed die slippage was not the cause of overlapping word errors for this period is that such error specimens do not generally have parts of their lettered inscriptions spread out noticeably. According to Case 5 of the slippage analysis in the case of dies whose length is only slightly more than half the circumference of the planchet early movable die slippage alone could not account for these errors. However, later analysis has shown that such errors could readily occur if longer dies were used and movable die slippage alone before the forward movement of the planchet took place. Furthermore, it has been noted [Ref. 6] that, throughout the period when ridges were added to the dies, ridges frequently overlapped other ridges and/or parts of the lettered inscriptions on the edge of the half dollars. Consistent with this is the theory that longer edging dies were indeed used and that during this period the ridges were also added to the initial sections of the edging dies.

An argument against the use of longer edging dies is that the addition of initial blanks sections before the texts would seem to promote die slippage. This can be countered by referring to the previous paragraph. The slippage which appears to have been the most bothersome was that which occurred before the forward movement of the planchet between both dies. The occurrence of this type of slippage with dies just slightly longer than half the circumference of the half dollar planchet would more often than not produce a coin whose obverse and reverse borders were not completely upset. The addition of the initial sections to the edging dies would tend to remedy this situation.

Another alternative cause of the DOLLY error is a Castaing machine malfunction. If such a malfunction required the intervention of the mint worker, arguments like those advanced in Case 1 would seem to rule out this possibility. On the other hand, if the malfunction permitted an uninterrupted completion of the milling process, it is inconceivable that it would have the effect of shifting the texts of each die to the right and even partly off the end.

Still another possible source of the DOLLY error is the mint worker himself. This time the error would be intentional. How he could have accomplished this is as follows:

1) He attached to the movable die holder a die having the text HALF A DOLLAR.

2) He attached a blank die to the fixed die holder.

3) He positioned the movable die ahead of its normal starting position so that it would touch the planchet at a point between L and A of DOLLAR.

4) He cranked the movable die from left to right completely past the fixed die.

5) He removed the blank die from the fixed die holder and substituted a die with the text FIFTY CENTS OR.

6) He replaced the die in the movable die holder with the blank die.

7) He positioned the planchet so that it touched the fixed die at a point between T and Y of FIFTY. He also oriented the planchet so that the milled DOLL was to the right of this point and the unmilled portion was to the left.

8) He cranked the movable die backwards, from right to left, so that it caught the planchet between it and the fixed die. He continued the cranking until the movable die reached its normal starting position. The product was a Dolly Madison half dollar.

Due to the pressure of the blank die on already milled sections of the coin, the letters of the inscription would be expected to be flattened and somewhat distinct. But only the L next to Y of DOLLY has such an appearance on the known specimen of the Dolly Madison half dollar. Because of this inconsistency, it is doubtful that the DOLLY error was produced in this manner or by any other means requiring a double milling of relatively large sections of the edge of the planchet.

Concluding Remarks

A variety of possible sources of the DOLLY edge error have been examined. Through my comments as to the likelihood of each source being responsible for the Dolly Madison half dollar, I have indicated my preference for the theory of longer edging die usage. However, I cannot state with certainty which, if any, of the possibilities discussed is the true one, because there are so many factors and unknowns involved.

Happily, as matters stand, I can still dream!

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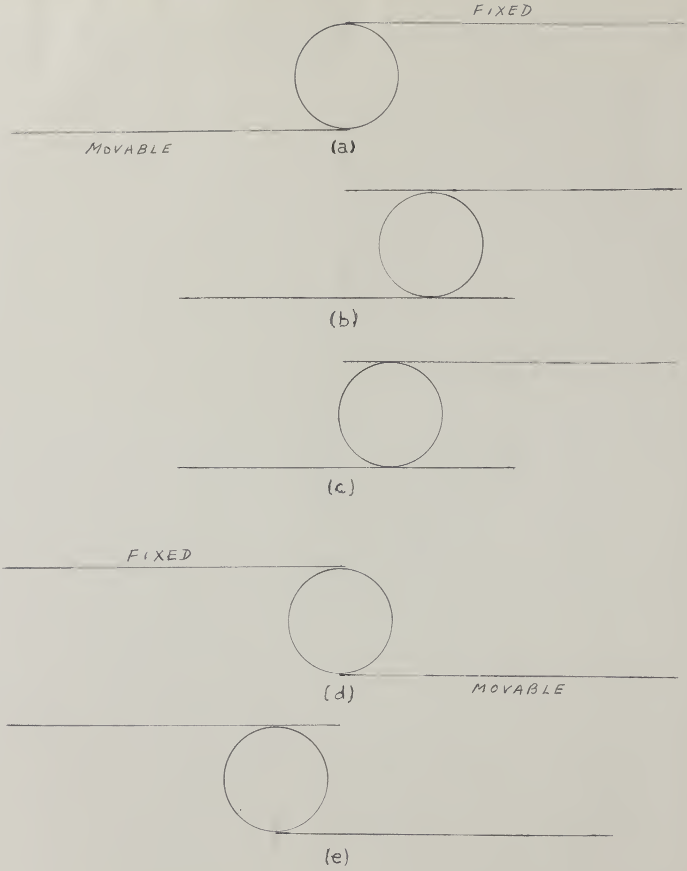
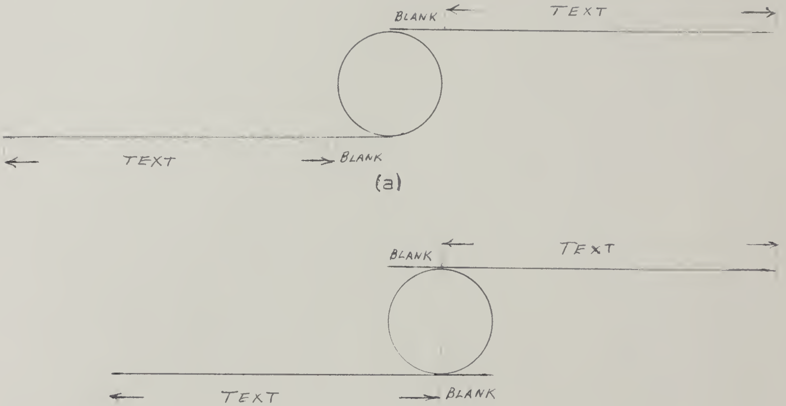


FIGURE 2



(a)

(b)

FIGURE 3

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

September 15, 1969

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Va. 23185

Dear Mr.Curtis:

I have not yet gotten to your article as there are a few ahead of you. However, when glancing at your bibliography, I noted that you did not cite "Updating the Fantastic 1804 Dollar", published in the September, 1964 Whitman's Monthly. This quotes the Encyclopedia Britannica, of 1790, where it stated that the edge dies are half the circumference of the coin. I didn't find this out until after the book was published.

I think you should include that date. Perhaps you were unaware of my supplementary article.

Sincerely yours,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

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THE NUMISMATIST

Official Publication of
AMERICAN NUMISMATIC ASSOCIATION
Edward C. Rochette
Editor

P. O. BOX 2366, COLORADO SPRINGS, COLORADO 80901

November 14, 1969

Mr. Eric P. Newman
P.O. Box 14020
St. Louis MO 63178

Dear Eric:

Following through on our discussion in regards to the edge dies for early half dollars, I wish to advise that I have just been notified by Allen Curtis that he is revising his manuscript and a new submission will be forthcoming shortly.

As you will recall when we discussed this particular article in Philadelphia, it was suggested that, since it is such a controversial subject, that we would publish Mr. Witham's version simultaneously in order that readers could make a comparison of the subject.

I just wanted to let you know the status of the article and I will be writing to Mr. Witham concerning the status of his version. You can be assured that as soon as both articles are received that they will receive my immediate attention for publication.

I just hope that this feature will stir as much interest as the controversial 1804 story that we published in the November issue. Mail is still coming in on that one. We may be able to breathe new life in the old magazine yet.

Sincerely,

EDWARD C. ROCHETTE
Editor

cc: Mr. Allen Curtis
Mr. Stewart P. Witham

ECR/pm

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

November 19, 1969

Mr. Eric P. Newman
P. O. Box 14020
St. Louis, Missouri 63178

Dear Mr. Newman:

Edward Rochette's letter of November 14, 1969, to you was not correct insofar as the status of my article is concerned. Recently, because my correspondence with Mr. Rochette has had difficulty in reaching him, I recapitulated my activities on my manuscript from the day of my submitting the original version to him in June. Also included in this recapitulation was the fact that I had revised my article and had sent it on to you for review. I further said that no doubt more revisions would follow after I receive your comments.

I was afraid that Mr. Rochette's letter would cause you to set my article aside since presumably another revised version would be fortcoming. Because this is not the case, please do not let Mr. Rochette's letter deter you from reviewing my paper.

In reference to your letter of September 15, 1969, I shall be happy to cite "Updating the Fantastic 1804 Dollar" in my bibliography.

Congratulations on your receiving the well deserved Farran Zerbe award!

Sincerely Yours,

Allen Curtis

Allen Curtis

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

February 5, 1970

Mr. Eric P. Newman
Eric P. Newman Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

It has been some time since I last heard from you regarding my manuscript, "A Dolly Madison Half Dollar". This, I thought, was due to the fact that you were reviewing several other papers prior to mine, as you pointed out in your letter of September 15, 1969. However, it has lately occurred to me that perhaps you were delaying your review of my paper until receiving Stewart Witham's "companion" paper. Of course, if Mr. Witham notified you as he did me that he was not going to write such a paper, then my initial thoughts were correct after all.

In case Mr. Witham did not write you, I shall reiterate the main points of his December 11, 1969 letter to me: He decided not to write a rebuttal because he generally agreed with my views (although he evidently believes that erroneous positioning of the moveable bar rather than slippage was the cause of edge errors; in my opinion either or both were responsible). He also expressed his theory that U. S. technicians improved the Castaing machine such that

a. at least 2 planchets were edged at one time - both flat on the table;
b. there were 2 operators - a feeder and a cranker;
c. there were 2 legends on each die;
d. planchets were edged - 2 to the right, then 2 to the left;
e. upsetting was not a deliberate function of the machine.

Personally, I think a and c are incompatible. One planchet could have the inscription correctly impressed but the other would not:

(1) Assume planchet 1 is in a correct starting position with respect to the two dies; the center of the other planchet, call it 2, is D (the diameter) away from the center of 1.

(2) When the moveable die has travelled 2D, planchet 2 is in position to start; therefore, the second legend on the moveable die must start 2D from the beginning of the bar. The distance between legends is then $2D - C/2 = 2D - \frac{\pi D}{2} \sim D(2 - \frac{11}{14}) = \frac{3}{7} D.$

(3) When the moveable die has travelled 4D, planchet 1 will have rotated more than 180° (but less than 360°). In fact, 3/7 D of blank area of the moveable die will have been impressed on the legend inscribed on the rim of 1 by the fixed die. Unless planchet 1 is somehow released at this point, the second legend on the moveable die will now commence to over-inscribe the fixed die legend already inscribed on the planchet edge.

I hope to hear from you soon.

Sincerely yours,

Allen Curtis

Allen Curtis

CC: Mr. Stewart P. Witham

P.S. If the fixed die had only one legend and was only slightly longer than C/2, then two planchets could be inscribed correctly using a two legended moveable die as described. However, for lettering a multiplicity of planchets in one operation, I would think that the moveable bar would be entirely blank and the fixed die would contain the entire legend. Note that Sir John Craig in The Mint says that the legend was on one or both the die bars used in the English version of the Castaing machine.

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

February 17, 1970

Mr. Allen Curtis
P.O.Box 350
Williamsburg, Va. 23185

Dear Mr. Curtis:

You are correct that I was awaiting a Witham version. In Ed. Rochette's letter of November 14, 1969 he indicated a desire to publish both his and yours at one time. However, since you asked again for my comments, here they are.

There is extensive improvement in the explanatory portions and I realize it isn't easy to make it clear.

P.2. I do not believe upsetting the border is a sound comment for an 1810 coin. They lettered edges to prevent clipping and filing and had no thought of flat raised borders until 1828, as you know. Radial edge decorations didn't need upsetting because of a loose collar.

P.3. Different size coins would have edge dies of different thickness for the Castaing machine so I don't think this point is valid. Any stops would also be easily moved.

P.9. I have a new theory. Could the fixed die itself have moved slightly in its holder? If a clamp or locking screw didn't hold tight then the die could slide in its track causing its position to change somewhat. This could also happen to the moveable die in relation to its holder. Think this through to see if I have a point.

P.11. The overlap text is a repetition of what is on p.6.

P.13. Intentional error seems too unsound to discuss and could be eliminated.

Now, please forgive me if I say that something should be done to shorten the text. I am often guilty of verbosity so I can speak freely. Try to cut down some of the explanation as the readers attention must be retained and too much detail avoided.

-2- February 17, 1970
Mr. Allen Curtis

The Craig comment that one blank edging die was used surprises me. Half of the edge would be crushed after lettering was on it and the other half wouldn't. Perhaps modern machinery could be so adapted but not Philadelphia in 1810.

We hope we have been helpful.

Sincerely yours,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN
atb

bc
Mr. Ed. Rochette

Allen Curtis
P. O. Box 380
Williamsburg, Virginia 23185

February 24, 1970

Mr. Eric P. Newman
Eric P. Newman Numismatic Education Society
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Thank you so much for the helpful comments and encouragement you extended in your letter of February 17, 1970.

You confirmed my fear that my analysis of slippage was too wordy. I think shortening it will be easier said than done, but I shall try.

Regarding your new theory, (if I understand it correctly) I cannot agree:

(1) I doubt that the U.S. mint would use die holders that were less secure than those used many years before by the French. (See Figs. 8 and 9 of the parts list of the Castaing machine pictured in Diderot's Encyclopedie, 1751-1765). Therefore, I would eliminate the possibility of clamps being used to fix the die to the holder.

(2) Nevertheless, for the sake of argument, I'll assume for the moment that the fixed die could slide in its track. For this "sliding" of the fixed die to be the cause of "word elision" errors such as ORLF, ORF, etc., part of the text from one die would not be inscribed (HA, HAL, etc. would not be milled). This means that the sliding of the fixed die would have to account for the omission of edging by one die of perhaps as much as or more than 10 millimeters depending on how much space was between HA, HAL, etc. and the end of the die. The fixed die in such a case would have to slide this 10 millimeters, a distance which is by no means slight.

(3) Nevertheless, for the sake of argument, I'll assume that the fixed die could slide such a distance. If the direction of operation of the Castaing machine were from left to right, the movable die would exert a tangential force on the planchet towards to the right causing the planchet to rotate counterclockwise. The planchet in turn would exert a tangential force on the fixed die towards the left. Thus, if the fixed die could slide in its track, the planchet would push it towards the left. The fixed die, being pushed in a direction opposite to the linear movement of the planchet, would give the effect of a shorter die. Therefore,

the planchet would be released before the movable die passed completely by it. The distance the planchet was from the end of the movable die upon release would be the distance the fixed die slid. Any way this same distance on the movable die text would not get impressed on the planchet. Hence, HA, HAL, etc. could be missing from the inscription on the planchet, but ORLF, ORF, etc. would not be formed; instead OR   LF, OR   F, etc. would be inscribed. That is, a large unmilled section would occur between the texts from the fixed and movable dies.

Sincerely yours,

Allen

Allen Curtis

P. O. Box 380
Williamsburg, Virginia 23185

April 28, 1971

Mr. Eric P. Newman
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Yesterday I received the 1884 German material on the Castaing machine. Thank you. I do appreciate your thoughtfulness.

Because I took a course in Scientific German more than 20 years ago (but have had nearly no occasion for its use since), I decided to attempt a rough translation myself. Since this will be undertaken in short intervals of leisure time, it may require a period of weeks. However, as soon as I complete (hopefully) the translation I shall be pleased to send you a copy.

Last week I submitted a paper to The Numismatist about a series of medals made in Nuremberg. In studying this series, I found that Friedrich Kleinert (Medallic Illustrations of British History) was the first in Germany to use a Castaing machine on medals. I only mention this as seeming very coincidental with your sending me the German material on the Castaing machine.

Thanks again.

Sincerely yours,

Allen

Allen Curtis

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

April 22, 1971

Mr. Allen Curtis
P.O.Box 330
Williamsburg, Virginia 23185

Dear Mr. Curtis:

In view of our long correspondence regarding the Castaing machine, I am enclosing herewith a discussion of the subject written in 1884. You might be able to have it translated and if you do I would appreciate a copy. I hope that it solves some of the open matters. At least the pictures are rather clear.

We hope we have been of service to you in this regard.

Sincerely yours,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN/atb

P. O. Box 380
Williamsburg, Virginia 23185

May 24, 1971

Mr. Eric P. Newman
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

I was extremely pleased to see in the May issue of The Numismatist that you were chosen as the fifth member of the ANAT management committee. Frankly, I have had some misgivings about ANAT (though I appreciate its goals and am in complete agreement and sympathy with them). Your election to the committee makes me more hopeful.

On July 16, 1970, I wrote to Virgil Hancock concerning ANAT. I posed with constructive intent several questions. On July 21, 1970, he partially answered some of my questions but confined his letter mainly to a caustic personal attack on me, essentially charging me with being misanthropic and having no trust in the integrity and basic honesty of my fellow man. Since James C. Risk on page 1107, paragraph 2, August 1970, The Numismatist, charged you in much the same manner, I feel we are kindred spirits.

Though somewhat daunted by Mr. Hancock's reply, I wrote him once more on July 25, 1970. On July 27, 1970, he answered some more of my questions via an enclosure of a 1968 article in The Coin World which I had not seen. He also said that his first letter was written in "high good humor". I have heard from another source that his July 21st letter was indicative of his style (but too caustic to suit me).

Much that he left unanswered concerns the protection of the "ordinary collector" and the small dealer. I wanted to be assured that maximal precautions would be taken to safeguard against unlooked for bad "side effects", which could occur before ANAT's goals were met and possibly prevent the goals from being achieved.

I have several suggestions to make, and ANA president Bergen did request that suggestions be submitted to the committee. However, previously the ANA membership was invited to send questions concerning ANAT to Mr. Hancock et al, and if his replies to me are representative samples, I would conclude that questions were really not wanted. If the ANAT committee sincerely wants suggestions, I would like to submit them to you. Please let me know whether you wish me to do so.

Sincerely yours,
Allen Curtis

P.S. I am progressing very slowly on the translation of the Castaing machine article in German.

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

June 7, 1971

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Virginia 23185

Dear Mr. Curtis:

I was on vacation when your May 24, 1971 letter arrived. Thank you for your kind remarks about my membership on the Authentication Committee.

I will be most pleased to receive from you all of the suggestions you have about the authentication function and please be as detailed as you wish. We have a very difficult task and want to do everything we can to do sound planning in advance.

As to your feelings about prior correspondence with another member, I hope you understand that sincerity is what counts,and the style of writing of some people reflects attitudes which result from overwork, criticism, self-confidence, etc.

Sincerely,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN
atb

P. O. Box 380
Williamsburg, Virginia 23185

February 6, 1972

Mr. Eric P. Newman
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

On June 12, 1971, I submitted to you four suggestions for the American Numismatic Association Certification Service. On July 19, 1971, you replied that you had read them carefully; however, you were not the only member of the committee so it was not timely to give me a report.

Apparently it still is untimely for such a report, or else I have missed published accounts of the activities of the committee that would have served as an adequate substitute for the report. If the latter is the case, would you be so kind as to furnish me with the substance of these accounts?

Enclosed is an article from one of our local newspapers, The Daily Press, February 5, 1972. I thought it might interest you: If I remember correctly, in your paper "Coinage for Colonial Virginia", which I no longer have, you mentioned the 1714 "Gloucester tokens". In the newspaper article the coins are used by some Gloucester residents as evidence of an earlier existence of the present courthouse than was formerly believed.

Sincerely yours,

Allen Curtis

Allen Curtis

P. S. While searching for your paper, I came across some notes I had made on a Virginia halfpenny in my collection - "Obv 8, rev H, better condition than that pictured by Newman". Was your illustration of the best specimen known, and is this a rare variety?

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

February 10, 1972

Mr. Allen Curtis
P.O.Box 380
Williamsburg, Virginia 23185

Dear Mr. Curtis:

I was fascinated by the Gloucester County Court House article. I will write these historians to see if they know who R. I. C. or R. I. G. Dawson might be. If I hit "pay dirt" I'll credit you with the find.

Would you be nice enough to send me another copy of your suggestions as to the authentication service. Our house is being redecorated and my papers have been mounded up and moved, to my complete dismay.

The ANACS Committee met in Washington, recently, and negotiations are pending to hire Charles Hoskins as the Director, if we can get ANA approval. We have had a most difficult time trying to work out details, find competent people, and establish practices. We want to present our proposition to the ANA Board later this month.

I am enclosing a copy of the tentative draft of certification procedures and if you care to make suggestions, please send them to me. I am working on my suggestions now.

Thank you, so much, for your interest in the situation.

Sincerely yours,

ERIC P. NEWMAN NUMISMATIC
EDUCATION SOCIETY

EPN/atb

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[illegible]
~~BEREA, OHIO~~
~~GREATER CLEVELAND~~

[redacted]

July 2, 1973

Mr. Eric P. Newman
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

It has been nearly seven weeks since I sent you my manuscript dealing with criteria for the design of edging dies. Since I have not heard from you, I assume that you have decided to review the manuscript, and that it was filed at the bottom of a list of such activities.

Because this is only an assumption, I am now writing to request your verification that the manuscript did, indeed, reach you. Enclosed is a stamped, self-addressed envelope for your reply.

Thank you for your past and present kindnesses.

Sincerely yours,

Allen

H. Allen Curtis

ERIC P. NEWMAN NUMISMATIC EDUCATION SOCIETY

6450 Cecil Avenue, St. Louis 5, Missouri

August 7, 1975

Mr. H. Allen Curtis
International Radiant Corp.
172 Dennis Drive
Williamsburg, Virginia 23185

Dear Allen:

The reason you did not hear from me is because I had a wonderful vacation in New Guinea. It was quite long and most exciting.

I have come home to a mound of numismatic mail and don't know where to begin. A quick glance at your paper indicated to me that you were very complimentary thinking I would understand your document. I suggest that you pretend I understood the article and it was perfect. I will gladly help any time I can be of benefit to you.

Cordially yours,

ERIC P. NEWMAN

EPN:jah

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~~BEREA, OHIO~~
[redacted]

May 15, 1973

Mr. Eric P. Newman
6450 Cecil Avenue
St. Louis 5, Missouri

Dear Mr. Newman:

Because of your valued help in offering suggestions and criticisms of my paper, "A Dolly Madison Half Dollar", prior to its publication in The Numismatist and because of your interest in the coining process in general and edging in particular, I have decided to send you the enclosed manuscript. The manuscript, hopefully, will be the basis of a sequel to the aforementioned paper. However, it is not in "article form".

If you have the opportunity, I should be very appreciative of your comments. In any case, you may keep your copy of the manuscript if you so wish. Even though the mathematics presented in the manuscript is of the most elementary nature - linear geometry - it may frighten away some of the general readers of a numismatic publication. I could rather easily eliminate the analysis of case 1, and merely mention those results if that would help. Judging from the "Letters from Members" section of The Numismatist in recent issues, some readers relish a certain amount of simple mathematics. At least the formula in J. H. Berger's article, "An Estimated Census of the Barber Coinage", has stimulated interest.

Thank you for any help you can offer.

Sincerely yours,

Allen

Allen Curtis

P. S. Please note my new address and use it for any correspondence.